TEJUS
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FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Project :	Improvements to roads and drains at Agrahara and surrounding area in Ward No 05 Byatarayanapura sub division
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	TEJUS CONSULTANTS, BANGALORE
Contractor:	Benaka Developers & Project Pvt.Ltd.

Type of Material	BC	**Proposed Use**	BC
Sample Location	At plant	**Date of Sampling**	12-07-2022
		Date of Testing	12-07-2022

Size of aggregate		**Flakiness Index**		**Elongation Index**	
Passing through IS sieve, mm	**Retained on IS sieve, mm**	**Total wt. of aggregate retained on sieves (A) gms.**	**Wt. of aggregate passing from Flakiness gauge (B) gms**	**Wt. of aggregate retained on Flakiness gauge (C) gms**	**Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms**
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	826	79	926	72
16.0	12.5	1336	138	1234	119
12.5	10.0	524	72	448	54
10.0	6.3	460	52	432	65
Total		**3146**	**341**	**3040**	**310**

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	10.84
Elongation Index(%):	10.20
Combined FI+EL (%)	21.04

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Authorised Signatory

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ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
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TEJUS
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DETERMINATION OF RATE OF SPREAD TACK COAT

Name of Work :	Improvements to roads and drains at Agrahara and surrounding area in Ward No 05 Byatarayanapura sub division
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	TEJUS CONSULTANTS, BANGALORE
Contractor :	Benaka Developers & Project Pvt.Ltd.
Date of Testing :	15-07-2022
Type of Mix :	Tack coat
Sample I/D :	7
Location	Thirumenahalli Surroundings

Determination	Unit	Test No		
		1	2	3
Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30	0.30 x .30
Area of Plate (a)	Sq.mtr	0.09	0.09	0.09
Initial Wt of empty Plate (b)	Kg	0.767	0.751	0.825
Final weight of plate after application of tack Coat (c)	Kg	0.790	0.774	0.848
Weight of tack Coat (d=c-b)	Kg	0.023	0.023	0.023
Rate of spread of tack coat	Kg/sq.m	0.253	0.254	0.253
Average	Kg/sq.m	0.254		
Specified Limit	Kg/sq.m	**0.250 Kg/sq.m**		

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TEJUS
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BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

Name of Work :	Improvements to roads and drains at Agrahara and surrounding area in Ward No 05 Byatarayanapura sub division
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	TEJUS CONSULTANTS, BANGALORE
Contractor :	Benaka Developers & Project Pvt.Ltd.
Date of Testing :	15-07-2022
Type of Mix :	BC
Sample I/D :	BC7

DETERMINATION OF BITUMEN CONTENT

Description	Trail 1	Trail 2
1. Weight of Mixture before extraction, g	935	949
2. Weight of Mixture after extraction, g	886	899
3. Weight of Bitumen	49	50
4. Weight of filter paper before extraction, g	2.00	2.00
5. Weight of filter paper after extraction, g	4.10	4.00
6. Weight of fines, g	1.60	2.00
7. Weight of Bitumen & fines	50.60	52.00
8. Bitumen content in %	5.41	5.48
9. Average Bitumen content in %	5.45	
10. Minimum Bitumen content in %	5.40	

GRADATION FOR BC AFTER EXTRACTION
(As per MORT&H 500-18,Grading-2)

Sample Location:	Thirumenahalli Surroundings	Date of Sampling:	15-07-2022
Type of material & Purpose:	BC	Date of testing:	15-07-2022
		Oven Dry Wt.(gms):	886.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	82	82.0	9.26	90.74	79 - 100
9.50	119	201.0	22.69	77.31	71 - 95
4.75	142	343.0	38.71	61.29	53 - 71
2.360	108	451.0	50.90	49.10	42 - 58
1.180	106	557.0	62.87	37.13	34 - 48
0.600	76	633.0	71.44	28.56	26 - 38
0.300	80	713.0	80.47	19.53	18 - 28
0.150	62	775.0	87.47	12.53	12 - 20
0.075	64	839.0	94.70	5.30	4 - 10
Pan	47.0				
Total	886.0				

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike
Project	Improvements to roads and drains at Agrahara and surrounding area in Ward No 05 Byatarayanapura sub division
Consultants	TEJUS CONSULTANTS, BANGALORE
Contractor	Benaka Developers & Project Pvt.Ltd.

SIEVE ANALYSIS

Total Weight:	3000 gms				
Type of Materia	M sand		**Proposed Use**	Concrete	
Sample Location	At Plant		**Date of Sampling**	18-07-2022	
			Date of Testing	18-07-2022	
IS Sieve Size	**Weight Retained**	**Cum. Weight Retained**	**Cum. % Retained**	**Cum. % Passing**	**Spec. Limit (%) Passing (Zone-II)**
10.00 mm	0	0	0	100.00	100
4.75 mm	236	236	7.87	92.13	90 - 100
2.36 mm	285	521	17.37	82.63	75 - 100
1.18 mm	529	1050	35.00	65.00	55 - 90
0.600 mm	548	1598	53.27	46.73	35 -59
0.300 mm	668	2266	75.53	24.47	8-30
0.150 mm	543	2809	93.63	6.37	0 - 10
Pan	191	3000			-

Remarks : ✓ Satisfactory / Not Satisfactory

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TEST REPORT					
Clients	Bruhat Bangalore Mahanagara Palike				
Project	Improvements to roads and drains at Agrahara and surrounding area in Ward No 05 Byatarayanapura sub division				
Consultants	TEJUS CONSULTANTS, BANGALORE				
Contractor	Benaka Developers & Project Pvt.Ltd.				
Total Weight:	10000	gms			

SIEVE ANALYSIS

Type of Material	20 mm down size		**Proposed Use**	Concrete	
Sample Location	At Plant		**Date of Sampling**	17-07-2022	
			Date of Testing	18-07-2022	
IS Sieve Size	**Weight Retained**	**Cum. Weight Retained**	**Cum. % Retained**	**Cum. % Passing**	**Spec. Limit (%) Passing**
40.00 mm	0	0	0	100	**100**
20.00 mm	270	270	2.70	97.30	**95 - 100**
10.00 mm	4992	5262	52.62	47.38	**25 - 55**
4.75 mm	4316	9578	95.78	4.22	**0 - 10**
Pan	422	10000			

Remarks : ✓ Satisfactory / Not Satisfactory

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike	
Project	Improvements to roads and drains at Agrahara and surrounding area in Ward No 05 Byatarayanapura sub division	
Consultants	TEJUS CONSULTANTS, BANGALORE	
Contractor	Benaka Developers & Project Pvt.Ltd.	
Total Weight:	10000	gms

SIEVE ANALYSIS

Type of Material	12.5 mm down size	Proposed Use	Concrete
Sample Location	Plant	Date of Sampling	17-07-2022
		Date of Testing	18-07-2022

IS Sieve Size (in mm)	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing
20.0	0	0	0	100	100
12.5	575	575	5.75	94.25	90-100
10.0	3368	3943	39.43	60.57	40-85
4.75	5439	9382	93.82	6.18	0-10
Pan	618	10000			

Remarks : Satisfactory / Not Satisfactory

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TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	Improvements to roads and drains at Agrahara and surrounding area in Ward No 05 Byatarayanapura sub division
Consultants	TEJUS CONSULTANTS, BANGALORE
Contractor	Benaka Developers & Project Pvt.Ltd.

SPECIFIC GRAVITY AND WATER ABSORPTION
FINE AGGREGATE (IS-2386-PART-3)

Type of Material	**M sand**	**Proposed Use**	Concrete
Location/Source	**At Plant**	**Date of Sampling**	17-07-2022
Period of Soaking	**24 hours**	**Date of Testing**	18-07-2022

Sl. No.	Test Property	TRIAL - 1	TRIAL - 2	TRIAL - 3	Average
A	Weight of sturated surface dry sample gm.	663	644	673	
B	Weight of oven - dry sample gm.	654	636	664	
C	Weight of Pycnometer Filled with water gm	1275	1275	1275	
D	Weight of Pycnometer + sample + water gm	1692	1679	1698	
E	Bulk specific gravity $\frac{B}{(C+A-D)}$	2.659	2.650	2.656	**2.655**
G	Absorption (%) $\frac{(A-B)*100}{B}$	1.376	1.258	1.355	**1.330**

Remarks : ✓ Satisfactory / Not Satisfactory

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Test Report on Cement

TEJUS CONSULTANTS

Project	Improvements to roads and drains at Agrahara and surrounding area in Ward No 05 Byatarayanapura sub division
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS, BANGALORE
Contractor	Benaka Developers & Project Pvt.Ltd.
Sample ID	Cement (ACC Cement) OPC 43 Grade
Date of Sample Tested	18-07-2022
Sample Supplied By	Agency

Sl.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	110Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	488 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	7 mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	30.00%	

Remarks : ✓ Satisfactory / Not Satisfactory

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TEJUS
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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike				
Project	Improvements to roads and drains at Agrahara and surrounding area in Ward No 05 Byatarayanapura sub division				
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore				
Contractor	Benaka Developers & Project Pvt.Ltd.				
Total Weight:	10000	gms			

SIEVE ANALYSIS

Type of Material	20 mm down size		**Proposed Use**	Concrete	
Sample Location	At Plant		**Date of Sampling**	18-07-2022	
			Date of Testing	19-07-2022	
IS Sieve Size	**Weight Retained**	**Cum. Weight Retained**	**Cum. % Retained**	**Cum. % Passing**	**Spec. Limit (%) Passing**
40.00 mm	0	0	0	100	**100**
20.00 mm	270	270	2.70	97.30	**95 - 100**
10.00 mm	4658	4928	49.28	50.72	**25 - 55**
4.75 mm	4584	9512	95.12	4.88	**0 - 10**
Pan	488	10000			

Remarks : ✓ Satisfactory / Not Satisfactory

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Test Report on Cement

TEJUS CONSULTANTS

Project	Improvements to roads and drains at Agrahara and surrounding area in Ward No 05 Byatarayanapura sub division
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS
Contractor	Benaka Developers & Project Pvt.Ltd.
Sample ID	Cement (ACC Cement) OPC 43 Grade
Date of Sample Tested	19-07-22
Sample Supplied By	Agency

Sl.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	989 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	485 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	6 mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	27.00%	

Remarks : ✓ Satisfactory / Not Satisfactory

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TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	Improvements to roads and drains at Agrahara and surrounding area in Ward No 05 Byatarayanapura sub division
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Benaka Developers & Project Pvt.Ltd.

SPECIFIC GRAVITY AND WATER ABSORPTION
FINE AGGREGATE (IS-2386-PART-3)

Type of Material	M sand	Proposed Use	Concrete
Location/Source	At Plant	Date of Sampling	18-07-2022
Period of Soaking	24 hours	Date of Testing	19-07-2022

Sl. No.	Test Property	TRIAL - 1	TRIAL - 2	TRIAL - 3	Average
A	Weight of sturated surface dry sample gm.	642	660	673	
B	Weight of oven - dry sample gm.	634	651	664	
C	Weight of Pycnometer Filled with water gm	1275	1275	1275	
D	Weight of Pycnometer + sample + water gm	1678	1690	1698	
E	Bulk specific gravity $\frac{B}{(C+A-D)}$	2.653	2.657	2.656	2.655
G	Absorption (%) $\frac{(A-B)*100}{B}$	1.262	1.382	1.355	1.333

Remarks : ✓ Satisfactory / Not Satisfactory

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ಪೂರ್ಣಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike
Project	Improvements to roads and drains at Agrahara and surrounding area in Ward No 05 Byatarayanapura sub division
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Benaka Developers & Project Pvt.Ltd.

SIEVE ANALYSIS

Total Weight:	3000	gms			
Type of Materia	M sand		**Proposed Use**	Concrete	
Sample Location	At Plant		**Date of Sampling**	19-07-2022	
			Date of Testing	19-07-2022	
IS Sieve Size	**Weight Retained**	**Cum. Weight Retained**	**Cum. % Retained**	**Cum. % Passing**	**Spec. Limit (%) Passing (Zone-II)**
10.00 mm	0	0	0	100.00	100
4.75 mm	236	236	7.87	92.13	90 - 100
2.36 mm	289	525	17.50	82.50	75 - 100
1.18 mm	420	945	31.50	68.50	55 - 90
0.600 mm	580	1525	50.83	49.17	35 -59
0.300 mm	756	2281	76.03	23.97	8-30
0.150 mm	546	2827	94.23	5.77	0 - 10
Pan	173	3000			-

Remarks : ✓ Satisfactory / Not Satisfactory

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Consultant's Representative

ಸಹಾಯಕ ಅಭಿಯಂತರರು
ಬಿ.ಬಿ.ಎಂ.ಪಿ ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-26

TEJUS
CONSULTANTS

TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike	
Project	Improvements to roads and drains at Agrahara and surrounding area in Ward No 05 Byatarayanapura sub division	
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore	
Contractor	Benaka Developers & Project Pvt.Ltd.	
Total Weight:	10000	gms

SIEVE ANALYSIS

Type of Material	12.5 mm down size	Proposed Use	Concrete
Sample Location	Plant	Date of Sampling	18-07-2022
		Date of Testing	19-07-2022

IS Sieve Size (in mm)	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing
20.0	0	0	0	100	100
12.5	600	600	6.00	94.00	90-100
10.0	3369	3969	39.69	60.31	40-85
4.75	5496	9465	94.65	5.35	0-10
Pan	535	10000			

Remarks : ✓ Satisfactory / Not Satisfactory

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Consultant's Representative

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ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
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ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-24

TEJUS CONSULTANTS

TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike	
Project	Improvements to roads and drains at Agrahara and surrounding area in Ward No 05 Byatarayanapura sub division	
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore	
Contractor	Benaka Developers & Project Pvt.Ltd.	
Total Weight:	10000	gms

SIEVE ANALYSIS

Type of Material	**12.5 mm down size**	**Proposed Use**	Concrete
Sample Location	Plant	**Date of Sampling**	19-07-2022
		Date of Testing	20-07-2022

IS Sieve Size (in mm)	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing
20.0	0	0	0	100	100
12.5	592	592	5.92	94.08	90-100
10.0	3389	3981	39.81	60.19	40-85
4.75	5436	9417	94.17	5.83	0-10
Pan	583	10000			

Remarks : ✓ Satisfactory / Not Satisfactory

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ಬಿ.ಬಿ.ಎಂ.ಪಿ ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರ
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿಬಿಎಂಪಿ, ಬೆಂಗಳೂರು-26

TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	Improvements to roads and drains at Agrahara and surrounding area in Ward No 05 Byatarayanapura sub division
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Benaka Developers & Project Pvt.Ltd.

SPECIFIC GRAVITY AND WATER ABSORPTION

FINE AGGREGATE (IS-2386-PART-3)

Type of Material	M sand	Proposed Use	Concrete
Location/Source	At Plant	Date of Sampling	19-07-2022
Period of Soaking	24 hours	Date of Testing	20-07-2022

Sl. No.	Test Property	TRIAL - 1	TRIAL - 2	TRIAL - 3	Average
A	Weight of sturated surface dry sample gm.	670	655	649	
B	Weight of oven - dry sample gm.	661	647	641	
C	Weight of Pycnometer Filled with water gm	1275	1275	1275	
D	Weight of Pycnometer + sample + water gm	1696	1687	1683	
E	Bulk specific gravity $\frac{B}{(C+A-D)}$	2.655	2.663	2.660	**2.659**
G	Absorption (%) $\frac{(A-B)*100}{B}$	1.362	1.236	1.248	**1.282**

Remarks : Satisfactory / Not Satisfactory

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ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿಬಿಎಂಪಿ, ಬೆಂಗಳೂರು-26

TEJUS CONSULTANTS

TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike
Project	Improvements to roads and drains at Agrahara and surrounding area in Ward No 05 Byatarayanapura sub division
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Benaka Developers & Project Pvt.Ltd.

SIEVE ANALYSIS

Total Weight:	3000	gms			
Type of Materia	M sand		Proposed Use	Concrete	
Sample Locatior	At Plant		Date of Sampling	20-07-2022	
			Date of Testing	20-07-2022	

IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing (Zone-II)
10.00 mm	0	0	0	100.00	100
4.75 mm	234	234	7.80	92.20	90 - 100
2.36 mm	286	520	17.33	82.67	75 - 100
1.18 mm	419	939	31.30	68.70	55 - 90
0.600 mm	572	1511	50.37	49.63	35 -59
0.300 mm	746	2257	75.23	24.77	8-30
0.150 mm	536	2793	93.10	6.90	0 - 10
Pan	207	3000			-

Remarks : ✓ Satisfactory / Not Satisfactory

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ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-26

Test Report on Cement

TEJUS CONSULTANTS

Project	Improvements to roads and drains at Agrahara and surrounding area in Ward No 05 Byatarayanapura sub division
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS
Contractor	Benaka Developers & Project Pvt.Ltd.
Sample ID	Cement (ACC Cement) OPC 43 Grade
Date of Sample Tested	20-07-2022
Sample Supplied By	Agency

Sl.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	104 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	475 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	5mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	29.00%	

Remarks : ✓ Satisfactory / Not Satisfactory

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ಬಿಬಿಎಂಪಿ ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

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ಬಿಬಿಎಂಪಿ, ಬೆಂಗಳೂರು-26

TEJUS
CONSULTANTS

TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike				
Project	Improvements to roads and drains at Agrahara and surrounding area in Ward No 05 Byatarayanapura sub division				
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore				
Contractor	Benaka Developers & Project Pvt.Ltd.				
Total Weight:	10000	gms			

SIEVE ANALYSIS

Type of Material	20 mm down size		**Proposed Use**	Concrete	
Sample Location	At Plant		**Date of Sampling**	19-07-2022	
			Date of Testing	20-07-2022	
IS Sieve Size	**Weight Retained**	**Cum. Weight Retained**	**Cum. % Retained**	**Cum. % Passing**	**Spec. Limit (%) Passing**
40.00 mm	0	0	0	100	**100**
20.00 mm	280	280	2.80	97.20	**95 - 100**
10.00 mm	4909	5189	51.89	48.11	**25 - 55**
4.75 mm	4318	9507	95.07	4.93	**0 - 10**
Pan	493	10000			

Remarks : ✓ Satisfactory / Not Satisfactory

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ಬಿ.ಬಿ.ಎಂ.ಪ ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

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ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-24

TEJUS
CONSULTANTS

Test Report on Compressive Strength of Concrete Cubes

Project	Improvements to roads and drains at Agrahara and surrounding area in Ward No 05 Byatarayanapura sub division
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS, BANGALORE
Contractor	Benaka Developers & Project Pvt.Ltd.
Sample ID	Cement (ACC Cement) OPC 43 Grade
Grade of concrete:	M30
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959
Sample Location:	Ch:22 (1st Block 5th street connecting road to Tirumenahalli Road)

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	21-07-2022	29-07-2022	7 days	8.136	22500	446	19.82	19.90
2	21-07-2022	29-07-2022	7 days	8.148	22500	449	19.96	
3	21-07-2022	29-07-2022	7 days	8.165	22500	448	19.91	

Remarks : ✓ Satisfactory / Not Satisfactory

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TEJUS
CONSULTANTS

Test Report on Compressive Strength of Concrete Cubes

Project	Improvements to roads and drains at Agrahara and surrounding area in Ward No 05 Byatarayanapura sub division
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS, BANGALORE
Contractor	Benaka Developers & Project Pvt.Ltd.
Sample ID	Cement (ACC Cement) OPC 43 Grade
Grade of concrete:	M30
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959
Sample Location:	Ch:53 (3rd Block 5th c/s Tirumenahalli Road)

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	21-07-2022	29-07-2022	7 days	8.221	22500	449	19.96	19.81
2	21-07-2022	29-07-2022	7 days	8.234	22500	446	19.82	
3	21-07-2022	29-07-2022	7 days	8.197	22500	442	19.64	

Remarks : ✓ Satisfactory / Not Satisfactory

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Test Report on Compressive Strength of Concrete Cubes

Project	Improvements to roads and drains at Agrahara and surrounding area in Ward No 05 Byatarayanapura sub division
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Benaka Developers & Project Pvt.Ltd.
Sample ID	Cement (ACC Cement) OPC 43 Grade
Grade of concrete:	M30
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959
Sample Location:	Ch:52 (3rd Block 6th c/s Tirumenahalli)

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	21-07-2022	29-07-2022	7 days	8.217	22500	445	19.78	19.85
2	21-07-2022	29-07-2022	7 days	8.244	22500	446	19.82	
3	21-07-2022	29-07-2022	7 days	8.234	22500	449	19.96	

Remarks : ✓ Satisfactory / Not Satisfactory

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Test Report on Compressive Strength of Concrete Cubes

Project	Improvements to roads and drains at Agrahara and surrounding area in Ward No 05 Byatarayanapura sub division
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Benaka Developers & Project Pvt.Ltd.
Sample ID	Cement (ACC Cement) OPC 43 Grade
Grade of concrete:	M30
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959
Sample Location:	Ch:28 (3rd Block 7th c/s Tirumenahalli)

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	21-07-2022	29-07-2022	7 days	8.224	22500	445	19.78	19.91
2	21-07-2022	29-07-2022	7 days	8.212	22500	449	19.96	
3	21-07-2022	29-07-2022	7 days	8.224	22500	450	20.00	

Remarks : ✓ Satisfactory / Not Satisfactory

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Test Report on Compressive Strength of Concrete Cubes

Project	Improvements to roads and drains at Agrahara and surrounding area in Ward No 05 Byatarayanapura sub division
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Benaka Developers & Project Pvt.Ltd.
Sample ID	Cement (ACC Cement) OPC 43 Grade
Grade of concrete:	M30
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959
Sample Location:	Ch:82 (3rd Block 8th c/s Tirumenahalli)

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	22-07-2022	29-07-2022	7 days	8.139	22500	452	20.09	19.99
2	22-07-2022	29-07-2022	7 days	8.145	22500	449	19.96	
3	22-07-2022	29-07-2022	7 days	8.157	22500	448	19.91	

Remarks : ✓ Satisfactory / Not Satisfactory

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CONSULTANTS

Test Report on Compressive Strength of Concrete Cubes

Project	Improvements to roads and drains at Agrahara and surrounding area in Ward No 05 Byatarayanapura sub division
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Benaka Developers & Project Pvt.Ltd.
Sample ID	Cement (ACC Cement) OPC 43 Grade
Grade of concrete:	M30
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959
Sample Location:	Ch:43 Behind JLNC Road

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	22-07-2022	29-07-2022	7 days	8.236	22500	442	19.64	19.82
2	22-07-2022	29-07-2022	7 days	8.215	22500	446	19.82	
3	22-07-2022	29-07-2022	7 days	8.147	22500	450	20.00	

Remarks : ✓ Satisfactory / Not Satisfactory

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TEJUS CONSULTANTS

Consultant's Representative

ಸಹಾಯಕ ಅಭಿಯಂತರರು
ಬಿ.ಬಿ.ಎಂ.ಪಿ ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರ
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-26

TEJUS
CONSULTANTS

Test Report on Compressive Strength of Concrete Cubes

Project	Improvements to roads and drains at Agrahara and surrounding area in Ward No 05 Byatarayanapura sub division
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Benaka Developers & Project Pvt.Ltd.
Sample ID	Cement (ACC Cement) OPC 43 Grade
Grade of concrete:	M30
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959
Sample Location:	Ch:92 Behind JLNC Road

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	22-07-2022	29-07-2022	7 days	8.175	22500	450	20.00	20.06
2	22-07-2022	29-07-2022	7 days	8.188	22500	452	20.09	
3	22-07-2022	29-07-2022	7 days	8.205	22500	452	20.09	

Remarks : ✓ Satisfactory / Not Satisfactory

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ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-26

TEJUS
CONSULTANTS

Test Report on Compressive Strength of Concrete Cubes

Project	Improvements to roads and drains at Agrahara and surrounding area in Ward No 05 Byatarayanapura sub division
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Benaka Developers & Project Pvt.Ltd.
Sample ID	Cement (ACC Cement) OPC 43 Grade
Grade of concrete:	M30
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959
Sample Location:	Ch:136 Behind JLNC Road

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	22-07-2022	29-07-2022	7 days	8.221	22500	445	19.78	19.75
2	22-07-2022	29-07-2022	7 days	8.192	22500	446	19.82	
3	22-07-2022	29-07-2022	7 days	8.185	22500	442	19.64	

Remarks : ✓ Satisfactory / Not Satisfactory

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TEJUS
CONSULTANTS

Test Report on Compressive Strength of Concrete Cubes

Project	Improvements to roads and drains at Agrahara and surrounding area in Ward No 05 Byatarayanapura sub division
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS, BANGALORE
Contractor	Benaka Developers & Project Pvt.Ltd.
Sample ID	Cement (ACC Cement) OPC 43 Grade
Grade of concrete:	M30
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959
Sample Location:	Ch:22 (1st Block 5th street connecting road to Tirumenahalli Road)

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	21-07-2022	04-08-2022	14 days	8.216	22500	622	27.64	27.85
2	21-07-2022	04-08-2022	14 days	8.194	22500	625	27.78	
3	21-07-2022	04-08-2022	14 days	8.184	22500	633	28.13	

Remarks : Satisfactory / Not Satisfactory

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Consultant's Representative

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ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-26

TEJUS CONSULTANTS
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TEJUS
CONSULTANTS

Test Report on Compressive Strength of Concrete Cubes

Project	Comprehensive developments to Roads and Drains in Kempegowda underpass at Kasturinagar
Client	Bruhat Bangalore Mahanagar Palike
Consultant	SILICON CONSULTANTS
Contractor	Sri C G CHANDRAPPA (CGC INFRA PROJECTS PRIVATE LIMITED)
Sample ID	Cement (ACC Cement) OPC 43 Grade
Grade of concrete:	M30
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959
Sample Location:	Ch:53 (3rd Block 5th c/s Tirumenahalli Road)

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	21-07-2022	04-08-2022	14 days	8.192	22500	626	27.82	28.22
2	21-07-2022	04-08-2022	14 days	8.177	22500	638	28.36	
3	21-07-2022	04-08-2022	14 days	8.188	22500	641	28.49	

Remarks : ✓ Satisfactory / Not Satisfactory

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TEJUS CONSULTANTS PVT. LTD.

Consultant's Representative

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ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
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ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-24

TEJUS
CONSULTANTS

Test Report on Compressive Strength of Concrete Cubes

Project	Improvements to roads and drains at Agrahara and surrounding area in Ward No 05 Byatarayanapura sub division
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Benaka Developers & Project Pvt.Ltd.
Sample ID	Cement (ACC Cement) OPC 43 Grade
Grade of concrete:	M30
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959
Sample Location:	Ch:52 (3rd Block 6th c/s Tirumenahalli)

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	21-07-2022	04-08-2022	14 days	8.147	22500	633	28.13	28.00
2	21-07-2022	04-08-2022	14 days	8.210	22500	630	28.00	
3	21-07-2022	04-08-2022	14 days	8.159	22500	627	27.87	

Remarks : ✓ Satisfactory / Not Satisfactory

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TEJUS CONSULTANTS

Consultant's Representative

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TEJUS
CONSULTANTS

Test Report on Compressive Strength of Concrete Cubes

Project	Improvements to roads and drains at Agrahara and surrounding area in Ward No 05 Byatarayanapura sub division
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Benaka Developers & Project Pvt.Ltd.
Sample ID	Cement (ACC Cement) OPC 43 Grade
Grade of concrete:	M30
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959
Sample Location:	Ch:28 (3rd Block 7th c/s Tirumenahalli)

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	21-07-2022	04-08-2022	28 days	8.269	22500	631	28.04	27.99
2	21-07-2022	04-08-2022	28 days	8.321	22500	628	27.91	
3	21-07-2022	04-08-2022	28 days	8.288	22500	630	28.00	

Remarks : ✓ Satisfactory / Not Satisfactory

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TEJUS
CONSULTANTS

Test Report on Compressive Strength of Concrete Cubes

Project	Improvements to roads and drains at Agrahara and surrounding area in Ward No 05 Byatarayanapura sub division
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Benaka Developers & Project Pvt.Ltd.
Sample ID	Cement (ACC Cement) OPC 43 Grade
Grade of concrete:	M30
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959
Sample Location:	Ch:82 (3rd Block 8th c/s Tirumenahalli)

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	22-07-2022	05-08-2022	14 days	8.221	22500	636	28.27	27.96
2	22-07-2022	05-08-2022	14 days	8.234	22500	627	27.87	
3	22-07-2022	05-08-2022	14 days	8.178	22500	624	27.73	

Remarks : ✓ Satisfactory / Not Satisfactory

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Test Report on Compressive Strength of Concrete Cubes

Project	Improvements to roads and drains at Agrahara and surrounding area in Ward No 05 Byatarayanapura sub division
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Benaka Developers & Project Pvt.Ltd.
Sample ID	Cement (ACC Cement) OPC 43 Grade
Grade of concrete:	M30
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959
Sample Location:	Ch:43 Behind JLNC Road

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	22-07-2022	05-08-2022	14 days	8.175	22500	625	27.78	28.03
2	22-07-2022	05-08-2022	14 days	8.189	22500	632	28.09	
3	22-07-2022	05-08-2022	14 days	8.192	22500	635	28.22	

Remarks : ✓ Satisfactory / Not Satisfactory

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CONSULTANTS

Test Report on Compressive Strength of Concrete Cubes

Project	Improvements to roads and drains at Agrahara and surrounding area in Ward No 05 Byatarayanapura sub division
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Benaka Developers & Project Pvt.Ltd.
Sample ID	Cement (ACC Cement) OPC 43 Grade
Grade of concrete:	M30
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959
Sample Location:	Ch:92 Behind JLNC Road

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	22-07-2022	05-08-2022	14 days	8.221	22500	642	28.53	28.81
2	22-07-2022	05-08-2022	14 days	8.235	22500	653	29.02	
3	22-07-2022	05-08-2022	14 days	8.240	22500	650	28.89	

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Project	Improvements to roads and drains at Agrahara and surrounding area in Ward No 05 Byatarayanapura sub division
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Benaka Developers & Project Pvt.Ltd.
Sample ID	Cement (ACC Cement) OPC 43 Grade
Grade of concrete:	M30
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959
Sample Location:	Ch:136 Behind JLNC Road

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	22-07-2022	05-08-2022	14 days	8.169	22500	639	28.40	28.53
2	22-07-2022	05-08-2022	14 days	8.179	22500	641	28.49	
3	22-07-2022	05-08-2022	14 days	8.201	22500	646	28.71	

Remarks : ✓ Satisfactory / Not Satisfactory

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BRUHAT BANGALORE MAHANAGARA PALIKE
BYTARAYANPURA DIVISION

Name of Work: Package 2 Consists of 3 Works of Rs.1100.00 Lakhs

3.Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 06 Byatarayanapura sub division

TEST REPORTS

FOURTH & PART BILL

TEJUS CONSULTANTS
CONSULTING ENGINEERS AND DESIGNERS
No.58 MIG, 6th Cross, 3rd Main
1st Stage, Basaveshwaranagar
Bangalore-560079
☎ 080 - 23287532
email: tejusconsultants@gmail.com

TEJUS
CONSULTANTS

Project	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 05 Byatarayanapura sub division
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS, BANGALORE
Contractor	Benaka Developers & Project Pvt.Ltd.

AGGREGATE IMPACT VALUE (IS: 2386 Part - 4)

Proposed Use	DBM	Date of Sampling	20-06-2022
Sample Location	At plant	Date of Testing	20-06-2022

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	393.00	376.00	369.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	296.00	284.00	276.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	97.00	92.00	93.00	
4	Aggregate Impact Value (%)	(Wc/Wa)*100	24.68	24.47	25.20	
5	Average Aggregate impact value	(%)	24.78			Max - 30 %

Remarks : ✓ Satisfactory / Not Satisfactory

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TEJUS CONSULTANTS

Consultant's Representative

Project	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 05 Byatarayanapura sub division
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS, BANGALORE
Contractor	Benaka Developers & Project Pvt.Ltd.

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Type of Material		DBM		**Proposed Use**	**DBM**
Sample Location		At plant		**Date of Sampling**	**20-06-2022**
				Date of Testing	**20-06-2022**
Size of aggregate		**Flakiness Index**		**Elongation Index**	
Passing through IS sieve, mm	**Retained on IS sieve, mm**	**Total wt. of aggregate retained on sieves (A) gms.**	**Wt. of aggregate passing from Flakiness gauge (B) gms**	**Wt. of aggregate retained on Flakiness gauge (C) gms**	**Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms**
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	7389	676	7038	342
31.5	25.0	4129	245	3620	270
25.0	20.0	2456	252	1089	235
20.0	16.0	1545	320	923	253
16.0	12.5	600	110	451	188
12.5	10.0	492	65	266	80
10.0	6.3	120	72	62	54
Total		**16731**	**1740**	**13449**	**1422**

Results

Flakiness Index(%):	10.40
Elongation Index(%):	10.57
Combined FI+EL (%)	20.97

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Consultant's Representative

ಸಹಾಯಕ ಅಭಿಯಂತರರು ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ್ಪ. ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-24

TEJUS
CONSULTANTS

BITUMEN CONTENT AND GRADATION DETERMINATION OF DENSE BITUMINOUS MACADAM MIX		
Name of Work	:	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 05 Byatarayanapura sub division
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS, BANGALORE
Contractor	:	Benaka Developers & Project Pvt.Ltd.
Date of Testing	:	22-06-2022
Type of Mix	:	DBM
Sample I/D	:	DBM-1

DETERMINATION OF BITUMEN CONTENT

Description	Trail 1	Trail 2
1. Weight of Mixture before extraction, g	881	929
2. Weight of Mixture after extraction, g	843	889
3. Weight of Bitumen	38	40
4. Weight of filter paper before extraction, g	2.00	2.00
5. Weight of filter paper after extraction, g	4.00	4.00
6. Weight of fines, g	2.00	2.00
7. Weight of Bitumen & fines	40.00	42.00
8. Bitumen content in %	4.54	4.52
9. Average Bitumen content in %	4.53	
10. Minimum Bitumen content in %	4.50	

GRADATION FOR DBM AFTER EXTRACTION

(As per MORT&H 500-10,Grading-2)

Sample Location:	BDS Layout 1st & 2nd cross Rd	**Date of Sampling:**	22-06-2022
		Date of testing:	22-06-2022
Type of material & Purpose:	DBM	**Oven Dry Wt.(gms):**	843

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
37.50	0.0	0.0	0.00	100.00	100.00
26.50	45.0	45.0	5.34	94.66	90-100
19.00	126.0	171.0	20.28	79.72	71-95
13.20	125.0	296.0	35.11	64.89	56-80
4.750	150.0	446.0	52.91	47.09	38-54
2.360	102.0	548.0	65.01	34.99	28-42
0.300	186.0	734.0	87.07	12.93	7-21
0.075	64.0	798.0	94.66	5.34	2-8
Pan	45.0	843.0			
Total	843.0				

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TEJUS CONSULTANTS

Consultant's Representative

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TEJUS
CONSULTANTS

BITUMEN CONTENT AND GRADATION DETERMINATION OF
DENSE BITUMINOUS MACADAM MIX

Name of Work	:	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 05 Byatarayanapura sub division
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS, BANGALORE
Contractor	:	Benaka Developers & Project Pvt.Ltd.
Date of Testing	:	22-06-2022
Type of Mix	:	DBM
Sample I/D	:	DBM-2

DETERMINATION OF BITUMEN CONTENT

Description	Trail 1	Trail 2
1. Weight of Mixture before extraction, g	867	957
2. Weight of Mixture after extraction, g	830	915
3. Weight of Bitumen	37	42
4. Weight of filter paper before extraction, g	2.00	2.00
5. Weight of filter paper after extraction, g	4.00	4.00
6. Weight of fines, g	2.00	2.00
7. Weight of Bitumen & fines	39.00	44.00
8. Bitumen content in %	4.50	4.60
9. Average Bitumen content in %	4.55	
10. Minimum Bitumen content in %	4.50	

GRADATION FOR DBM AFTER EXTRACTION
(As per MORT&H 500-10,Grading-2)

Sample Location:	BDS Layout 3rd & 4th cross Rd	**Date of Sampling:**	22-06-2022
		Date of testing:	22-06-2022
Type of material & Purpose:	DBM	**Oven Dry Wt.(gms):**	830

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
37.50	0.0	0.0	0.00	100.00	100.00
26.50	44.0	46.0	5.54	94.46	90-100
19.00	122.0	150.0	18.07	81.93	71-95
13.20	115.0	265.0	31.93	68.07	56-80
4.750	165.0	438.0	52.77	47.23	38-54
2.360	96.0	534.0	64.34	35.66	28-42
0.300	144.0	678.0	81.69	18.31	7-21
0.075	94.0	772.0	93.01	6.99	2-8
Pan	58.0	830.0	100.00		
Total	830.0				

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Consultant's Representative

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CONSULTANTS

DETERMINATION OF RATE OF SPREAD TACK COAT				
Name of Work :	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 05 Byatarayanapura sub division			
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE			
Consultant :	TEJUS CONSULTANTS, BANGALORE			
Contractor :	Benaka Developers & Project Pvt.Ltd.			
Date of Testing :	22-06-2022			
Type of Mix :	Tack coat			
Sample I/D :	1			
Location :	BDS Layout 1st & 2nd cross Rd			
Determination	**Unit**	**Test No**		
		1	**2**	**3**
Location	**Chainage**	**Ch'@38 BDS 1st c/s**	**Ch'@136 BDS 1st c/s**	**Ch'@120 BDS 2nd c/s**
Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30	0.30 x .30
Area of Plate (a)	Sq.mtr	0.09	0.09	0.09
Initial Wt of empty Plate (b)	Kg	0.762	0.764	0.810
Final weight of plate after application of tack Coat (c)	Kg	0.785	0.787	0.833
Weight of tack Coat (d=c-b)	Kg	0.023	0.023	0.023
Rate of spread of tack coat	Kg/sq.m	0.253	0.253	0.253
Average	Kg/sq.m	0.253		
Specified Limit	Kg/sq.m	**0.250 Kg/sq.m**		

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ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
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DETERMINATION OF RATE OF SPREAD TACK COAT

Name of Work :	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 05 Byatarayanapura sub division
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	TEJUS CONSULTANTS, BANGALORE
Contractor :	Benaka Developers & Project Pvt.Ltd.
Date of Testing :	22-06-2022
Type of Mix :	Tack coat
Sample I/D :	2
Location :	BDS Layout 3rd & 4th cross Rd

Determination	**Unit**	**Test No**		
		1	**2**	**3**
Loacation	**Chainage**	**Ch'@105 BDS 3rd c/s**	**Ch'@290 BDS 3rd c/s**	**Ch'@145 BDS 4th c/s**
Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30	0.30 x .30
Area of Plate (a)	Sq.mtr	0.09	0.09	0.09
Initial Wt of empty Plate (b)	Kg	0.768	0.762	0.820
Final weight of plate after application of tack Coat (c)	Kg	0.791	0.785	0.843
Weight of tack Coat (d=c-b)	Kg	0.023	0.023	0.023
Rate of spread of tack coat	Kg/sq.m	0.253	0.252	0.254
Average	Kg/sq.m	0.253		
Specified Limit	Kg/sq.m	0.250 Kg/sq.m		

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AGGREGATE IMPACT VALUE
(IS: 2386 Part - 4)

Project	Improvements to roads and drains at Hogdonagar and surrounding area in Ward No 05 Byatarayanapura sub division		
Client	BRUHAT BANGALORE MAHANAGARA PALIKE		
Consultant	TEJUS CONSULTANTS, BANGALORE		
Contractor	Benaka Developers & Project Pvt.Ltd.		
Proposed Use	BC	**Date of Sampling**	22-06-2022
Sample Location	At plant	**Date of Testing**	22-06-2022

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	386.00	370.00	349.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	304.00	274.00	287.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	97.00	96.00	90.00	
4	Aggregate Impact Value (%)	(Wc/Wa)*100	25.13	25.95	25.79	
5	Average Aggregate impact value	(%)	25.62			Max - 30 %

Remarks : Satisfactory / Not Satisfactory

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FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Project :	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 05 Byatarayanapura sub division
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	TEJUS CONSULTANTS, BANGALORE
Contractor:	Benaka Developers & Project Pvt.Ltd.

Type of Material	BC	**Proposed Use**	BC
Sample Location	At plant	**Date of Sampling**	22-06-2022
		Date of Testing	22-06-2022

Size of aggregate		**Flakiness Index**		**Elongation Index**	
Passing through IS sieve, mm	**Retained on IS sieve, mm**	**Total wt. of aggregate retained on sieves (A) gms.**	**Wt. of aggregate passing from Flakiness gauge (B) gms**	**Wt. of aggregate retained on Flakiness gauge (C) gms**	**Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms**
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	822	72	928	79
16.0	12.5	1225	120	1236	115
12.5	10.0	522	75	449	55
10.0	6.3	460	54	436	66
Total		**3029**	**321**	**3049**	**315**

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	10.60
Elongation Index(%):	10.33
Combined FI+EL (%)	20.93

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ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-24

TEJUS
CONSULTANTS

BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

Name of Work :	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 05 Byatarayanapura sub division
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	TEJUS CONSULTANTS, BANGALORE
Contractor :	Benaka Developers & Project Pvt.Ltd.
Date of Testing :	24-06-2022
Type of Mix :	BC
Sample I/D :	BC1

DETERMINATION OF BITUMEN CONTENT

Description	Trail 1	Trail 2
1. Weight of Mixture before extraction, g	949	918
2. Weight of Mixture after extraction, g	899	870
3. Weight of Bitumen	50	48
4. Weight of filter paper before extraction, g	2.00	2.00
5. Weight of filter paper after extraction, g	4.10	4.00
6. Weight of fines, g	1.60	2.00
7. Weight of Bitumen & fines	51.60	50.00
8. Bitumen content in %	5.44	5.45
9. Average Bitumen content in %	5.44	
10. Minimum Bitumen content in %	5.40	

GRADATION FOR BC AFTER EXTRACTION
(As per MORT&H 500-18,Grading-2)

Sample Location:	BDS Layout 1st A,1st cross and 2nd c/s Rd	Date of Sampling:	24-06-2022
Type of material & Purpose:	BC	Date of testing:	24-06-2022
		Oven Dry Wt.(gms):	899.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	86	79.0	8.79	91.21	79 - 100
9.50	125	204.0	22.69	77.31	71 - 95
4.75	130	334.0	37.15	62.85	53 - 71
2.360	119	453.0	50.39	49.61	42 - 58
1.180	108	561.0	62.40	37.60	34 - 48
0.600	89	650.0	72.30	27.70	26 - 38
0.300	86	736.0	81.87	18.13	18 - 28
0.150	63	799.0	88.88	11.12	12 - 20
0.075	75	874.0	97.22	2.78	4 - 10
Pan	25.0				
Total	899.0				

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TEJUS
CONSULTANTS

DETERMINATION OF RATE OF SPREAD TACK COAT

Name of Work :	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 05 Byatarayanapura sub division
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	TEJUS CONSULTANTS, BANGALORE
Contractor :	Benaka Developers & Project Pvt.Ltd.
Date of Testing :	24-06-2022
Type of Mix :	Tack coat
Sample I/D :	1
Location	BDS Layout 1st A,1st cross and 2nd c/s Rd

Determination	**Unit**	**Test No**		
		1	**2**	**3**
Location	**Chainage**	**@255 BDS 1st A c/s Rd**	**@122 BDS 1st c/s Rd**	**@130 BDS 2nd c/s Rd**
Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30	0.30 x .30
Area of Plate (a)	Sq.mtr	0.09	0.09	0.09
Initial Wt of empty Plate (b)	Kg	0.770	0.776	0.785
Final weight of plate after application of tack Coat (c)	Kg	0.793	0.799	0.808
Weight of tack Coat (d=c-b)	Kg	0.023	0.023	0.023
Rate of spread of tack coat	Kg/sq.m	0.251	0.251	0.251
Average	Kg/sq.m	0.251		
Specified Limit	Kg/sq.m	**0.250 Kg/sq.m**		

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TEJUS CONSULTANTS
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TEJUS
CONSULTANTS

BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

Name of Work :	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 05 Byatarayanapura sub division
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	TEJUS CONSULTANTS, BANGALORE
Contractor :	Benaka Developers & Project Pvt.Ltd.
Date of Testing :	25-06-2022
Type of Mix :	BC
Sample I/D :	BC2

DETERMINATION OF BITUMEN CONTENT

Description	Trail 1	Trail 2
1. Weight of Mixture before extraction, g	960	968
2. Weight of Mixture after extraction, g	909	917
3. Weight of Bitumen	51	51
4. Weight of filter paper before extraction, g	2.00	2.00
5. Weight of filter paper after extraction, g	4.10	4.00
6. Weight of fines, g	1.60	2.00
7. Weight of Bitumen & fines	52.60	53.00
8. Bitumen content in %	5.48	5.48
9. Average Bitumen content in %	5.48	
10. Minimum Bitumen content in %	5.40	

GRADATION FOR BC AFTER EXTRACTION
(As per MORT&H 500-18,Grading-2)

Sample Location:	BDS Layout 3rd and 4th c/s Rd	Date of Sampling:	25-06-2022
Type of material & Purpose:	BC	Date of testing:	25-06-2022
		Oven Dry Wt.(gms):	909.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	85	85.0	9.35	90.65	79 - 100
9.50	109	194.0	21.34	78.66	71 - 95
4.75	138	332.0	36.52	63.48	53 - 71
2.360	122	454.0	49.94	50.06	42 - 58
1.180	100	554.0	60.95	39.05	34 - 48
0.600	75	629.0	69.20	30.80	26 - 38
0.300	80	709.0	78.00	22.00	18 - 28
0.150	71	780.0	85.81	14.19	12 - 20
0.075	73	853.0	93.84	6.16	4 - 10
Pan	56.0				
Total	909.0				

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TEJUS
CONSULTANTS

DETERMINATION OF RATE OF SPREAD TACK COAT				
Name of Work :	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 05 Byatarayanapura sub division			
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE			
Consultant :	TEJUS CONSULTANTS, BANGALORE			
Contractor :	Benaka Developers & Project Pvt.Ltd.			
Date of Testing :	25-06-2022			
Type of Mix :	Tack coat			
Sample I/D :	2			
Location	BDS Layout 3rd and 4th c/s Rd			
Determination	**Unit**	**Test No**		
		1	**2**	**3**
Location	**Chainage**	**@136 BDS 3rd c/s Rd**	**@302 BDS 3rd c/s Rd**	**@183 BDS 4th c/s Rd**
Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30	0.30 x .30
Area of Plate (a)	Sq.mtr	0.09	0.09	0.09
Initial Wt of empty Plate (b)	Kg	0.751	0.784	0.804
Final weight of plate after application of tack Coat (c)	Kg	0.774	0.807	0.827
Weight of tack Coat (d=c-b)	Kg	0.023	0.023	0.023
Rate of spread of tack coat	Kg/sq.m	0.251	0.252	0.252
Average	Kg/sq.m	0.252		
Specified Limit	Kg/sq.m	**0.250 Kg/sq.m**		

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4.The material used in the site satisfied the standard of MORTH's 5th revision and hence can be used in the work.

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ಬಿ.ಬಿ.ಎಂ.ಪಿ, ಬೆಂಗಳೂರು-24

FLAKINESS AND ELONGATION INDICES (IS 2386, PART I)

Project :	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No.66 Byatarayanapura sub division
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	TEJUS CONSULTANTS, BANGALORE
Contractor:	Renaka Developers & Project Pvt Ltd

Type of Material	BC	**Proposed Use**	BC
Sample Location	At plant	**Date of Sampling**	01.07.2022
		Date of Testing	01.07.2022

Size of aggregate		Flakiness Index		Elongation Index	
Passing through IS sieve, mm	**Retained on IS sieve, mm**	**Total wt. of aggregate retained on sieves (A) gms.**	**Wt. of aggregate passing from Flakiness gauge (B) gms**	**Wt. of aggregate retained on Flakiness gauge (C) gms**	**Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms**
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	825	73	926	74
16.0	12.5	1335	130	1236	118
12.5	10.0	525	74	448	56
10.0	6.3	462	55	435	66
Total		**3147**	**332**	**3045**	**314**

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	10.55	
Elongation Index(%):	10.31	
Combined FI+EI, (%)	20.86	

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AGGREGATE IMPACT VALUE
(IS: 2386 Part - 4)

Project	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 05 Byatarayanapura sub division		
Client	BRUHAT BANGALORE MAHANAGARA PALIKE		
Consultant	TEJUS CONSULTANTS, BANGALORE		
Contractor	Benaka Developers & Project Pvt.Ltd.		
Proposed Use	BC	**Date of Sampling**	01-07-2022
Sample Location	At plant	**Date of Testing**	01-07-2022

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	389.00	353.00	357.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	290.00	262.00	262.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	99.00	91.00	95.00	
4	Aggregate Impact Value (%)	(Wc/Wa)*100	25.45	25.78	26.61	
5	Average Aggregate impact value	(%)	25.95			Max - 30 %

Remarks : ✓ Satisfactory / Not Satisfactory

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BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

Name of Work :	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 05 Byatarayanapura sub division
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	TEJUS CONSULTANTS, BANGALORE
Contractor :	Benaka Developers & Project Pvt.Ltd.
Date of Testing :	04-07-2022
Type of Mix :	BC
Sample I/D :	BC3

DETERMINATION OF BITUMEN CONTENT

Description	Trail 1	Trail 2
1. Weight of Mixture before extraction, g	936	972
2. Weight of Mixture after extraction, g	887	921
3. Weight of Bitumen	49	51
4. Weight of filter paper before extraction, g	2.00	2.00
5. Weight of filter paper after extraction, g	4.10	4.00
6. Weight of fines, g	1.60	2.00
7. Weight of Bitumen & fines	50.60	53.00
8. Bitumen content in %	5.41	5.45
9. Average Bitumen content in %	**5.43**	
10. Minimum Bitumen content in %	**5.40**	

GRADATION FOR BC AFTER EXTRACTION
(As per MORT&H 500-18,Grading-2)

Sample Location:	Shiradi Sai Rathan Layout 1st A cross Road	Date of Sampling:	04-07-2022
Type of material & Purpose:	BC	Date of testing:	04-07-2022
		Oven Dry Wt.(gms):	887.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	80	80.0	9.02	90.98	79 - 100
9.50	105	185.0	20.86	79.14	71 - 95
4.75	129	314.0	35.40	64.60	53 - 71
2.360	105	419.0	47.24	52.76	42 - 58
1.180	108	527.0	59.41	40.59	34 - 48
0.600	82	609.0	68.66	31.34	26 - 38
0.300	76	685.0	77.23	22.77	18 - 28
0.150	65	750.0	84.55	15.45	12 - 20
0.075	70	820.0	92.45	7.55	4 - 10
Pan	67.0				
Total	887.0				

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DETERMINATION OF RATE OF SPREAD TACK COAT

Name of Work :	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 05 Byatarayanapura sub division
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	TEJUS CONSULTANTS, BANGALORE
Contractor :	Benaka Developers & Project Pvt.Ltd.
Date of Testing :	04-07-2022
Type of Mix :	Tack coat
Sample I/D :	3
Location	Shiradi Sai Rathan Layout 1st A cross Road

Determination	**Unit**	**Test No**		
		1	**2**	**3**
Location	**Chainage**	**@65**	**@163**	**@208**
Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30	0.30 x .30
Area of Plate (a)	Sq.mtr	0.09	0.09	0.09
Initial Wt of empty Plate (b)	Kg	0.790	0.782	0.781
Final weight of plate after application of tack Coat (c)	Kg	0.813	0.805	0.804
Weight of tack Coat (d=c-b)	Kg	0.023	0.023	0.023
Rate of spread of tack coat	Kg/sq.m	0.253	0.252	0.250
Average	Kg/sq.m	0.252		
Specified Limit	Kg/sq.m	**0.250 Kg/sq.m**		

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DETERMINATION OF RATE OF SPREAD TACK COAT

Name of Work :	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 05 Byatarayanapura sub division
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	TEJUS CONSULTANTS, BANGALORE
Contractor :	Benaka Developers & Project Pvt.Ltd.
Date of Testing :	05-07-2022
Type of Mix :	Tack coat
Sample I/D :	4
Location	Shiradi Sai Rathan Layout 2nd A cross Road

Determination	**Unit**	**Test No**		
		1	**2**	**3**
Location	**Chainage**	**@54**	**@157**	**@207**
Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30	0.30 x .30
Area of Plate (a)	Sq.mtr	0.09	0.09	0.09
Initial Wt of empty Plate (b)	Kg	0.836	0.792	0.782
Final weight of plate after application of tack Coat (c)	Kg	0.859	0.815	0.805
Weight of tack Coat (d=c-b)	Kg	0.023	0.023	0.023
Rate of spread of tack coat	Kg/sq.m	0.254	0.253	0.253
Average	Kg/sq.m	0.254		
Specified Limit	Kg/sq.m	**0.250 Kg/sq.m**		

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DETERMINATION OF RATE OF SPREAD TACK COAT

Name of Work :	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 05 Byatarayanapura sub division
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	TEJUS CONSULTANTS, BANGALORE
Contractor :	Benaka Developers & Project Pvt.Ltd.
Date of Testing :	05-07-2022
Type of Mix :	Tack coat
Sample I/D :	5
Location	Shiradi Sai Rathan Layout 3rd A cross Road

Determination	Unit	Test No		
		1	2	3
Location	Chainage	@71	@107	@200
Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30	0.30 x .30
Area of Plate (a)	Sq.mtr	0.09	0.09	0.09
Initial Wt of empty Plate (b)	Kg	0.756	0.766	0.812
Final weight of plate after application of tack Coat (c)	Kg	0.779	0.789	0.835
Weight of tack Coat (d=c-b)	Kg	0.023	0.023	0.023
Rate of spread of tack coat	Kg/sq.m	0.251	0.252	0.252
Average	Kg/sq.m	0.252		
Specified Limit	Kg/sq.m	0.250 Kg/sq.m		

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BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

Name of Work :	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 05 Byatarayanapura sub division
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	TEJUS CONSULTANTS, BANGALORE
Contractor :	Benaka Developers & Project Pvt.Ltd.
Date of Testing :	05-07-2022
Type of Mix :	BC
Sample I/D :	BC4

DETERMINATION OF BITUMEN CONTENT

Description	Trail 1	Trail 2
1. Weight of Mixture before extraction, g	936	969
2. Weight of Mixture after extraction, g	887	918
3. Weight of Bitumen	49	51
4. Weight of filter paper before extraction, g	2.00	2.00
5. Weight of filter paper after extraction, g	4.10	4.00
6. Weight of fines, g	1.60	2.00
7. Weight of Bitumen & fines	50.60	53.00
8. Bitumen content in %	5.41	5.47
9. Average Bitumen content in %	5.44	
10. Minimum Bitumen content in %	5.40	

GRADATION FOR BC AFTER EXTRACTION
(As per MORT&H 500-18,Grading-2)

Sample Location:	Shiradi Sai Rathan Layout 2nd A cross Road	Date of Sampling:	05-07-2022
Type of material & Purpose:	BC	Date of testing:	05-07-2022
		Oven Dry Wt.(gms):	887.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	86	86.0	9.70	90.30	79 - 100
9.50	114	200.0	22.55	77.45	71 - 95
4.75	126	326.0	36.75	63.25	53 - 71
2.360	116	442.0	49.83	50.17	42 - 58
1.180	108	550.0	62.01	37.99	34 - 48
0.600	63	613.0	69.11	30.89	26 - 38
0.300	79	692.0	78.02	21.98	18 - 28
0.150	62	754.0	85.01	14.99	12 - 20
0.075	69	823.0	92.78	7.22	4 - 10
Pan	64.0				
Total	887.0				

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BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

Name of Work :	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 05 Byatarayanapura sub division
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	TEJUS CONSULTANTS, BANGALORE
Contractor :	Benaka Developers & Project Pvt.Ltd.
Date of Testing :	05-07-2022
Type of Mix :	BC
Sample I/D :	BC5

DETERMINATION OF BITUMEN CONTENT

Description	Trail 1	Trail 2
1. Weight of Mixture before extraction, g	923	955
2. Weight of Mixture after extraction, g	874	905
3. Weight of Bitumen	49	50
4. Weight of filter paper before extraction, g	2.00	2.00
5. Weight of filter paper after extraction, g	4.10	4.00
6. Weight of fines, g	1.60	2.00
7. Weight of Bitumen & fines	50.60	52.00
8. Bitumen content in %	5.48	5.45
9. Average Bitumen content in %	5.46	
10. Minimum Bitumen content in %	5.40	

GRADATION FOR BC AFTER EXTRACTION
(As per MORT&H 500-18,Grading-2)

Sample Location:	Shiradi Sai Rathan Layout 3rd A cross Road	Date of Sampling:	05-07-2022
Type of material & Purpose:	BC	Date of testing:	05-07-2022
		Oven Dry Wt.(gms):	874.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	89	89.0	10.18	89.82	79 - 100
9.50	103	192.0	21.97	78.03	71 - 95
4.75	130	322.0	36.84	63.16	53 - 71
2.360	106	428.0	48.97	51.03	42 - 58
1.180	105	533.0	60.98	39.02	34 - 48
0.600	78	611.0	69.91	30.09	26 - 38
0.300	82	693.0	79.29	20.71	18 - 28
0.150	65	758.0	86.73	13.27	12 - 20
0.075	70	828.0	94.74	5.26	4 - 10
Pan	46.0	874.0			
Total	874.0				

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AGGREGATE IMPACT VALUE
(IS: 2386 Part - 4)

Project	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 05 Byatarayanapura sub division		
Client	BRUHAT BANGALORE MAHANAGARA PALIKE		
Consultant	TEJUS CONSULTANTS, BANGALORE		
Contractor	Benaka Developers & Project Pvt.Ltd.		
Proposed Use	BC	Date of Sampling	18-07-2022
Sample Location	At plant	Date of Testing	18-07-2022

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	391.00	362.00	368.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	303.00	278.00	282.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	88.00	84.00	86.00	
4	Aggregate Impact Value (%)	(Wc/Wa)*100	22.51	23.20	23.37	
5	Average Aggregate impact value	(%)	23.03			Max - 30 %

Remarks : ✓ Satisfactory / Not Satisfactory

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ಸಹಾಯಕ ಕಾರ್ಯನಿರ್ವಾಹಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
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FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Project :	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 05 Byatarayanapura sub division
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	TEJUS CONSULTANTS, BANGALORE
Contractor:	Benaka Developers & Project Pvt.Ltd.

Type of Material	BC	**Proposed Use**	BC
Sample Location	At plant	**Date of Sampling**	18-07-2022
		Date of Testing	18-07-2022

Size of aggregate		**Flakiness Index**		**Elongation Index**	
Passing through IS sieve, mm	**Retained on IS sieve, mm**	**Total wt. of aggregate retained on sieves (A) gms.**	**Wt. of aggregate passing from Flakiness gauge (B) gms**	**Wt. of aggregate retained on Flakiness gauge (C) gms**	**Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms**
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	825	78	922	74
16.0	12.5	1332	125	1235	116
12.5	10.0	526	76	448	56
10.0	6.3	460	52	435	64
Total		**3143**	**331**	**3040**	**310**

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	10.53
Elongation Index(%):	10.20
Combined FI+EI (%)	20.73

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DETERMINATION OF RATE OF SPREAD TACK COAT

Name of Work :	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 05 Byatarayanapura sub division
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	TEJUS CONSULTANTS, BANGALORE
Contractor :	Benaka Developers & Project Pvt.Ltd.
Date of Testing :	20-07-2022
Type of Mix :	Tack coat
Sample I/D :	6
Location	Apoorva Enclave Road

Determination	Unit	Test No		
		1	2	3
Location	Chainage	Ch'@38	Ch'@96	Ch'@152
Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30	0.30 x .30
Area of Plate (a)	Sq.mtr	0.09	0.09	0.09
Initial Wt of empty Plate (b)	Kg	0.812	0.798	0.780
Final weight of plate after application of tack Coat (c)	Kg	0.835	0.821	0.803
Weight of tack Coat (d=c-b)	Kg	0.023	0.023	0.023
Rate of spread of tack coat	Kg/sq.m	0.253	0.254	0.253
Average	Kg/sq.m	0.254		
Specified Limit	Kg/sq.m	0.250 Kg/sq.m		

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3. Any Query regarding the report must be reported reported within 15days from the date of testing.
4. The material used in the site satisfied the standard of MORTH's 5th revision and hence can be used in the work.

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BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

Name of Work :	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 06 Byatarayanapura sub division
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	TEJUS CONSULTANTS, BANGALORE
Contractor :	Benaka Developers & Project Pvt.Ltd.
Date of Testing :	20-07-2022
Type of Mix :	BC
Sample I/D :	BC6

DETERMINATION OF BITUMEN CONTENT

Description	Trail 1	Trail 2
1. Weight of Mixture before extraction, g	972	919
2. Weight of Mixture after extraction, g	921	871
3. Weight of Bitumen	51	48
4. Weight of filter paper before extraction, g	2.00	2.00
5. Weight of filter paper after extraction, g	4.10	4.00
6. Weight of fines, g	1.60	2.00
7. Weight of Bitumen & fines	52.60	50.00
8. Bitumen content in %	5.41	5.44
9. Average Bitumen content in %	5.43	
10. Minimum Bitumen content in %	5.40	

GRADATION FOR BC AFTER EXTRACTION
(As per MORT&H 500-18,Grading-2)

Sample Location:	Apoorva Enclave Road	Date of Sampling:	20-07-2022
Type of material & Purpose:	BC	Date of testing:	20-07-2022
		Oven Dry Wt.(gms):	921.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	81	81.0	8.79	91.21	79 - 100
9.50	105	186.0	20.20	79.80	71 - 95
4.75	132	318.0	34.53	65.47	53 - 71
2.360	119	437.0	47.45	52.55	42 - 58
1.180	120	557.0	60.48	39.52	34 - 48
0.600	85	642.0	69.71	30.29	26 - 38
0.300	82	724.0	78.61	21.39	18 - 28
0.150	64	788.0	85.56	14.44	12 - 20
0.075	73	861.0	93.49	6.51	4 - 10
Pan	60.0	921.0			
Total	921.0				

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BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

Name of Work :	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 05 Byatarayanapura sub division
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	TEJUS CONSULTANTS, BANGALORE
Contractor :	Benaka Developers & Project Pvt.Ltd.
Date of Testing :	21-07-2022
Type of Mix :	BC
Sample I/D :	BC7

DETERMINATION OF BITUMEN CONTENT

Description	Trail 1	Trail 2
1. Weight of Mixture before extraction, g	935	956
2. Weight of Mixture after extraction, g	886	906
3. Weight of Bitumen	49	50
4. Weight of filter paper before extraction, g	2.00	2.00
5. Weight of filter paper after extraction, g	4.10	4.00
6. Weight of fines, g	1.60	2.00
7. Weight of Bitumen & fines	50.60	52.00
8. Bitumen content in %	5.41	5.44
9. Average Bitumen content in %	**5.43**	
10. Minimum Bitumen content in %	**5.40**	

GRADATION FOR BC AFTER EXTRACTION
(As per MORT&H 500-18,Grading-2)

Sample Location:	Apoorva Enclave Road	Date of Sampling:	21-07-2022
Type of material & Purpose:	BC	Date of testing:	21-07-2022
		Oven Dry Wt.(gms):	886.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	95	95.0	10.72	89.28	79 - 100
9.50	117	212.0	23.93	76.07	71 - 95
4.75	132	344.0	38.83	61.17	53 - 71
2.360	104	448.0	50.56	49.44	42 - 58
1.180	102	550.0	62.08	37.92	34 - 48
0.600	74	624.0	70.43	29.57	26 - 38
0.300	75	699.0	78.89	21.11	18 - 28
0.150	66	765.0	86.34	13.66	12 - 20
0.075	60	825.0	93.12	6.88	4 - 10
Pan	61.0				
Total	886.0				

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TEJUS

DETERMINATION OF RATE OF SPREAD TACK COAT

Name of Work :	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 05 Byataravanapura sub division
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	TEJUS CONSULTANTS, BANGALORE
Contractor :	Benaka Developers & Project Pvt.Ltd.
Date of Testing :	21-07-2022
Type of Mix :	Tack coat
Sample I/D :	7
Location	Apoorva Enclave Road

Determination	Unit	Test No		
		1	2	3
Location	Chainage	Ch'@215	Ch'@280	Ch'@343
Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30	0.30 x .30
Area of Plate (a)	Sq.mtr	0.09	0.09	0.09
Initial Wt of empty Plate (b)	Kg	0.768	0.792	0.795
Final weight of plate after application of tack Coat (c)	Kg	0.791	0.815	0.818
Weight of tack Coat (d=c-b)	Kg	0.023	0.023	0.023
Rate of spread of tack coat	Kg/sq.m	0.253	0.254	0.253
Average	Kg/sq.m	0.254		
Specified Limit	Kg/sq.m	0.250 Kg/sq.m		

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DETERMINATION OF RATE OF SPREAD TACK COAT

Name of Work :	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 05 Byatarayanapura sub division
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	TEJUS CONSULTANTS, BANGALORE
Contractor :	Benaka Developers & Project Pvt.Ltd.
Date of Testing :	21-07-2022
Type of Mix :	Tack coat
Sample I/D :	8
Location	Apoorva Enclave Road

Determination	**Unit**	**Test No**		
		1	**2**	**3**
Location	**Chainage**	**Ch'@406**	**Ch'@483**	**Ch'@520**
Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30	0.30 x .30
Area of Plate (a)	Sq.mtr	0.09	0.09	0.09
Initial Wt of empty Plate (b)	Kg	0.796	0.814	0.799
Final weight of plate after application of tack Coat (c)	Kg	0.819	0.837	0.822
Weight of tack Coat (d=c-b)	Kg	0.023	0.023	0.023
Rate of spread of tack coat	Kg/sq.m	0.251	0.252	0.252
Average	Kg/sq.m	0.252		
Specified Limit	Kg/sq.m	**0.250 Kg/sq.m**		

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BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

Name of Work :	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 05 Byatarayanapura sub division
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	TEJUS CONSULTANTS, BANGALORE
Contractor :	Benaka Developers & Project Pvt.Ltd.
Date of Testing :	21-07-2022
Type of Mix :	BC
Sample I/D :	BC8

DETERMINATION OF BITUMEN CONTENT

Description	Trail 1	Trail 2
1. Weight of Mixture before extraction, g	971	944
2. Weight of Mixture after extraction, g	920	895
3. Weight of Bitumen	51	49
4. Weight of filter paper before extraction, g	2.00	2.00
5. Weight of filter paper after extraction, g	4.10	4.00
6. Weight of fines, g	1.60	2.00
7. Weight of Bitumen & fines	52.60	51.00
8. Bitumen content in %	5.42	5.40
9. Average Bitumen content in %	**5.41**	
10. Minimum Bitumen content in %	**5.40**	

GRADATION FOR BC AFTER EXTRACTION
(As per MORT&H 500-18,Grading-2)

Sample Location:	Apoorva Enclave Road	Date of Sampling:	21-07-2022
Type of material & Purpose:	BC	Date of testing:	21-07-2022
		Oven Dry Wt.(gms):	920.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	90	90.0	9.78	90.22	79 - 100
9.50	114	204.0	22.17	77.83	71 - 95
4.75	121	325.0	35.33	64.67	53 - 71
2.360	119	444.0	48.26	51.74	42 - 58
1.180	105	549.0	59.67	40.33	34 - 48
0.600	90	639.0	69.46	30.54	26 - 38
0.300	76	715.0	77.72	22.28	18 - 28
0.150	72	787.0	85.54	14.46	12 - 20
0.075	66	853.0	92.72	7.28	4 - 10
Pan	67.0				
Total	920.0				

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